

**Notice of Allowability**

Application No.

09/693,355

Examiner

Ramsey Refai

Applicant(s)

SHAH ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment received 04/11/06 and Examiner's Amendment attached hereto.
2. ☒ The allowed claim(s) is/are 1,6-14,19-27,32-39,42,44 and 46.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other   |

BUNJOB JARONGCHONWANIT  
SUPERVISORY PATENT EXAMINER

## EXAMINER' S AMENDMENT

An examiner' s amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner' s amendment was given in a telephone interview with Rory Rankin on July 6, 2006.

Claims 1, 6-14, 19-27, 32-39, 42, 44, and 46 are allowed.

- The application has been amended as follows:

1. (Currently Amended) In a computer system, a method comprising:

generating one or more actors on a server, wherein each of said one or more actors is a functional component of a distributed application;

linking said one or more actors on the server in a first hierarchical tree;

generating a dataset corresponding to a second hierarchical tree, wherein the second hierarchical tree is a subset of the first hierarchical tree; wherein each node in said first hierarchical tree comprises a source actor, each node in the replicated second hierarchical tree comprises a member actor, and each member actor corresponds to a respective source actor and wherein a first portion of a function to be performed by the distributed application is executed by the member actor and a second portion of the function to be performed by the distributed application is executed by the source actor;

sending said dataset to a client;

replicating the second hierarchical tree in said client using said dataset, wherein said replicating comprises generating one or more peer actors on the client, and wherein said one or more peer actors on the client comprise executable code for performing

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tasks that are in addition to tasks performed by the one or more actors on the server;

and

providing a communication link between each of said one or more peer actors of the replicated second hierarchical tree on the client and a corresponding actor of the second hierarchical tree on the server.

2. (Currently Canceled)

3-5. (Canceled)

6. (Original) The method of claim 1, wherein each said actor comprises a tree of hierarchically linked nodes, said nodes comprising one or more objects.

7. (Original) The method of claim 6, wherein said nodes further comprise one or more nested actors.

8. (Previously Presented) The method of claim 1, wherein said sending said dataset comprises sending said dataset via a secure communication network.

9. (Currently Amended) The method of claim 2 1, wherein said generating a dataset comprises:

obtaining inclusion criteria from one or more parameter sets;

traversing said first hierarchical tree to determine nodes of said first hierarchical tree that comply with said inclusion criteria;

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obtaining a pre-initialized object for each of said nodes that comply with said inclusion criteria; generating a client graph comprising said pre-initialized objects.

10. (Previously Presented) The method of claim 9, wherein said traversing said first hierarchical tree is on a node-by-node basis starting from the root node and proceeding through all the leaf nodes.
11. (Previously Presented) The method of claim 9, wherein said dataset is indicative of the full client graph.
12. (Currently Amended) The method of claim 21, wherein said dataset comprises a subgraph for updating the replicated second hierarchical tree of said client.
13. (Original) The method of claim 9, wherein said pre-initialized-object comprises methods and attributes for construction and initialization of said client graph.
14. (Currently amended) A computer program product comprising:  
a computer readable medium having computer program code embodied therein for creating and deploying client side actors for a server application, said computerreadable medium comprising computer program code configured to cause a computer to:  
generate one or more actors on a server, wherein each of said one or more actors is a functional

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component of a distributed application; link said one or more actors on the server in a first hierarchical tree;

generate a dataset corresponding to a second hierarchical tree, wherein the second hierarchical tree is a subset of the first hierarchical tree; wherein each node in said first hierarchical tree comprises a source actor, each node in the replicated second hierarchical tree comprises a member actor, and each member actor corresponds to a respective source actor and wherein a first portion of a function to be performed by the distributed application is executed by the member actor and a second portion of the function to be performed by the distributed application is executed by the source actor;

send said dataset to a client;

replicate the second hierarchical tree in said client using said dataset, wherein to replicate the second hierarchical tree, the computer program code is further configured to cause a computer to generate one or more peer actors on the client, and wherein said one or more peer actors on the client comprise executable code for performing tasks that are in addition to tasks performed by the one or more actors on the server; and

provide a communication link between each of said one or more peer actors of the replicated second hierarchical tree on the client and a corresponding actor of the second hierarchical tree on the server.

15. (Currently Canceled)

16-18. (Cancelled)

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19. (Original) The computer program product of claim 14, wherein each said actor comprises a tree of hierarchically linked nodes, said nodes comprising one or more objects.
20. (Original) The computer program product of claim 19, wherein said nodes further comprise one or more nested actors.
21. (Previously Presented) The computer program product of claim 14, wherein said send said dataset comprises sending said dataset using a secure communication network.
22. (Currently Amended) The computer program product of claim ~~15~~ 14, wherein said generate a dataset comprises:
  - obtaining inclusion criteria from a parameter set;
  - traversing said first hierarchical tree to determine nodes of said first hierarchical tree that comply with said inclusion criteria;
  - obtaining a pre-initialized object for each of said nodes that comply with said inclusion criteria;
  - generating a client graph comprising said pre-initialized objects.
23. (Previously Presented) The computer program product of claim 22, wherein said traversing said first hierarchical tree is on a node-by-node basis starting from the root node and proceeding through all the leaf nodes.
24. (Previously Presented) The computer program product of claim 22, wherein said dataset is indicative of the full client graph.

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25. (Currently Amended) The computer program product of claim ~~15~~ 14, wherein said dataset comprises a subgraph for updating the replicated second hierarchical tree of said client.

26. (Original) The computer program product of claim 21, wherein said pre-initialized object comprises methods and attributes for construction and initialization of said client graph.

27. (Currently amended) An apparatus comprising:

a server comprising one or more server actors linked in a source hierarchical tree, wherein each of said one or more actors is a functional component of a distributed application;

one or more clients, each of said clients coupled to the server via a respective communication interface;

wherein said server is configured to:

generate a dataset for each of said one or more clients, wherein each dataset corresponds to a respective subset of the source hierarchical tree;  
wherein each node in said first hierarchical tree comprises a source actor, each node in the replicated second hierarchical tree comprises a member actor, and each member actor corresponds to a respective source actor and wherein a first portion of a function to be performed by the distributed application is executed by the member actor and a second portion of the function to be performed by the distributed application is executed by the source actor;

send each dataset to the respective client via the respective communication interface;

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wherein each of said one of more clients is configured to replicate a respective subset of the source hierarchical tree based on said dataset, wherein to replicate a respective subset of the source hierarchical tree, each of said one or more clients is further configured to generate one or more peer actors on the client;

wherein said one or more peer actors on the client comprise executable code for performing tasks that are in addition to tasks performed by the one or more actors on the server; and

provide a communication link between each of said one or more peer actors of the replicated second hierarchical tree on the client and a corresponding actor of the second hierarchical tree on the server.

28. (Currently Canceled)

29-31. (Cancelled)

32. (Original) The apparatus of claim 27, wherein each said actor comprises a tree of hierarchically linked nodes, said nodes comprising one or more objects.

33. (Original) The apparatus of claim 32, wherein said nodes further comprise one or more nested actors.

34. (Previously Presented) The apparatus of claim 27, wherein each of said communication interfaces is secured.



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35. (Currently Amended) The apparatus of claim ~~28~~ 27, wherein said generating a dataset comprises:

obtaining inclusion criteria from a parameter set;

traversing said source hierarchical tree to determine nodes of said source hierarchical tree that comply with said inclusion criteria;

obtaining a pre-initialized object for each of said nodes that comply with said inclusion criteria;

generating a client graph comprising said pre-initialized objects.

36. (Original) The apparatus of claim 35, wherein said traversing said source hierarchical tree is on a node-by-node basis.

37. (Previously Presented) The apparatus of claim 35, wherein said dataset is indicative of the full client graph.

38. (Currently Amended) The apparatus of claim ~~28~~ 27, wherein said dataset comprises a subgraph for updating the replicated subset of the source hierarchical tree of said client.

39. (Original) The apparatus of claim 35, wherein said pre-initialized object comprises methods and attributes for construction and initialization of said client graph.

40-41. (Currently Canceled)

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42. (Currently Amended) The method of claim ~~41~~1, wherein the function to be performed by the distributed application comprises rendering a scene.

43 (Currently Canceled)

44. (Currently Amended) The computer program product of claim ~~43~~14, wherein the function to be performed by the distributed application comprises rendering a scene.

45. (Currently Canceled)

46. (Currently Amended) The apparatus of claim ~~28~~27, wherein the function to be performed by the distributed application comprises rendering a scene.

- The following is an examiner' s statement of reasons for allowance:

The prior art of record fails to teach neither singly nor in combination the claimed features of a method for generating one or more actors on a server, wherein each of said one or more actors is a functional component of a distributed application; linking said one or more actors on the server in a first hierarchical tree; generating a dataset corresponding to a second hierarchical tree, wherein the second hierarchical tree is a subset of the first hierarchical tree; wherein each node in said first hierarchical tree comprises a source actor, each node in the replicated second hierarchical tree comprises a member actor, and each member actor corresponds to a respective source actor and wherein a first portion of a function to be performed by the distributed application is executed by the member actor and a second portion of the function to be performed by the distributed application is executed by the source actor;

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sending said dataset to a client; replicating the second hierarchical tree in said client using said dataset, wherein said replicating comprises generating one or more peer actors on the client, and wherein said one or more peer actors on the client comprise executable code for performing tasks that are in addition to tasks performed by the one or more actors on the server; and providing a communication link between each of said one or more peer actors of the replicated second hierarchical tree on the client and a corresponding actor of the second hierarchical tree on the server as in independent claim 1.

Independent claims 14 and 27 contain similar features as claim 1 above, therefore are allowed for similar reasons.

Claims 6-13, 19-26, 32-39, 42, 44, and 46 depend on claims 1, 14, and 27, therefore are allowed for similar reasons.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “ Comments on Statement of Reasons for Allowance.”


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Refai whose telephone number is (571) 272-3975. The examiner can normally be reached on M-F 8:30 – 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ramsey Refai  
Examiner  
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July 6, 2006



BUNLOB JAROENCHONWANIT  
SUPERVISORY PATENT EXAMINER